

7-6: Probability Distributions

Warm-up: Consider the sample space when rolling two dice.

1. Which sum is most likely to occur?
2. Which two sums are least likely to occur?
3. Which is more likely, a sum of 3 or a sum of 11?
4. Name the other pairs of sums that are equally likely to occur.

Random Variable:

Probability Distribution:

Relative Frequency:

Mean/Expected Value:

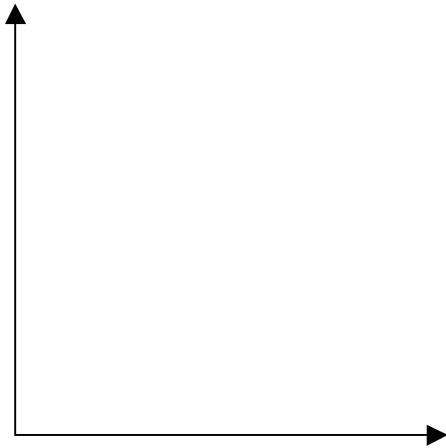
Example 1: Matt Mitarnowski rolled two dice 9 times resulting in the following sums:

6, 10, 11, 10, 9, 9, 12, 7, 9

- a. Find the mean of these numbers.
- b. Find the percent error between the mean and expected value for the distribution, assuming the dice are fair.

Example 2: Consider a family with five children. Assume that births of boys and girls are equally likely. Let the random variable of the distribution stand for the number of boys.

- a. Give the domain for the random variable.
- b. Find the probability for each value of the random variable.
- c. Construct a histogram of the probability distribution.



- d. Find the expected value of the distribution.

Homework:

“Even if you're on the right track, you'll get run over if you just sit there.” - Will Rogers